

CLAIMS

- 1 A method for the detection of a polymorphism in OATPC in a human, which method comprises determining the sequence of the human at at least one of the following polymorphic 5 positions:
- positions 510, 696, 1299, 1312, 1347, 1561, 2028, 2327 and 2342 in sequence of the OATPC gene as defined by the position in SEQ ID NO: 1;
- positions 400, 405, 488 and 643 in OATPC polypeptide defined by position in SEQ ID NO: 2;
- positions 321 and 1332 defined by position in SEQ ID NO 3;
- 10 position 41 defined by position in SEQ ID NO 4;
- positions 109 and 244 defined by position in SEQ ID NO 5;
- positions 117 and 283 defined by position in SEQ ID NO 6;
- positions 209 and 211 defined by position in SEQ ID NO 7;
- positions 63 to 68 defined by position in SEQ ID NO 8;
- 15 position 53 defined by position in SEQ ID NO 9;
- position 75 defined by position in SEQ ID NO 10;
- position 162 defined by position in SEQ ID NO 11; and
- positions 84 defined by position in SEQ ID NO 12.

2 Use of a method as defined in claim 1 to assess the pharmacogenetics of a drug

- 20 transportable by OATPC.

3 A polynucleotide comprising at least 20 bases of the human OATPC gene and comprising an allelic variant selected from any one of the following:

Region	variant	Position in SEQ ID NO	SEQ ID NO
Exon 4	A	510	1
Exon 5	T	670	1
Exon 5	T	696	1
Exon 9	G	1299	1
Exon 9	A	1312	1
Exon 9	A	1347	1
Exon 10	C	1561	1
Exon 14	C	2028	1
3'UTR	Insert T	2327	1
3'UTR	C	2342	1
Promoter	G	321	3
Promoter	C	1332	3
Intron 1	A	41	4

Intron 2	G	109	5
Intron 2	G	244	5
Intron 3	A	117	6
Intron 3	A	283	6
Intron 4	A	209	7
Intron 4	A	211	7
Intron 4	Deletion CTTGTAA	63	8
Intron 6	T	53	9
Intron 9	Insert TTC	75	10
Intron 11	Insert T	162	11
Intron 12	C	84	12

4 A nucleotide primer which can detect a polymorphism as defined in claim 1.

5 An allele specific primer capable of detecting a OATPC gene polymorphism as defined in claim 1.

5 6 An allele-specific oligonucleotide probe capable of detecting a OATPC gene polymorphism as defined in claim 1.

7 Use of an OATPC polymorphism as defined in claim 1 as a genetic marker in a linkage study.

8 A method of treating a human in need of treatment with a drug transportable by

10 OATPC in which the method comprises:

i) detection of a polymorphism in OATPC in the human, which detection comprises determining the sequence of the human at one or more of the following positions:

positions 487, 510, , 554, 670, 696, 819, 820, 1299, 1312, 1347, 1561, 2028, 2327 and 2342 in sequence of the OATPC gene as defined by the position in SEQ ID NO: 1;

15 positions 130, 152, 174, 241, 400, 405, 488 and 643 in OATPC polypeptide defined by position in SEQ ID NO: 2;

positions 321 and 1332 defined by position in SEQ ID NO 3;

position 41 defined by position in SEQ ID NO 4;

positions 109 and 244 defined by position in SEQ ID NO 5;

20 positions 117 and 283 defined by position in SEQ ID NO 6;

positions 209 and 211 defined by position in SEQ ID NO 7;

positions 63 to 68 defined by position in SEQ ID NO 8;

position 53 defined by position in SEQ ID NO 9;

position 75 defined by position in SEQ ID NO 10;

position 162 defined by position in SEQ ID NO 11; and
positions 84 defined by position in SEQ ID NO 12.

and determining the status of the human by reference to polymorphism in the OATPC gene;
and

- 5 ii) administering an effective amount of the drug.
- 9 A method according to claim 8 wherein the drug is a statin.
- 10 A method according to claim 8 wherein the drug is rosuvastatin.
- 11 An allelic variant of human OATPC polypeptide comprising at least one of the following:

- 10 a leucine at position 400 of SEQ ID NO 2;
- an isoleucine at position 405 of SEQ ID NO 2;
- an arginine at position 488 of SEQ ID NO 2;
- a phenylalanine at position 643 of SEQ ID NO 2;
- or a fragment thereof comprising at least 10 amino acids provided that the fragment
- 15 comprises at least one allelic variant.
- 12 An antibody specific for an allelic variant of human OATPC polypeptide as defined in claim 11.

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